

We claim:

1. A telecommunication system that allows communication between a circuit-based wireless telephony network and a packet-based Internet telephony network, the system comprising:

5 a circuit-based wireless telephony network providing wireless access to the system;

a packet-based Internet telephony network providing Internet telephony access to the system; and

10 a base station gateway controller for providing an interface between the wireless telephony network and the Internet telephony network.

2. The system of claim 1, wherein the system does not require utilization of the Public Switched Telephone Network.

15 3. The system of claim 1, wherein the base station gateway controller is controlled by a call processing engine.

4. The system of claim 1, wherein the base station gateway controller provides a data signal transport gateway between circuit-based data and packet-based data.

20

5. The system of claim 4, wherein the circuit-based data and the packet based data are voice data.

6. The system of claim 1, wherein the base station gateway controller is configured to perform vocoding functions to translate between different data coding schemes.

7. The system of claim 1, comprising a packet-based mobile switching center  
5 communicatively connected with the base station gateway controller.

8. The system of claim 1, comprising:  
a packet-based mobile switching center communicatively connected with the base station gateway controller; and

10 one or more circuit-based base station controllers communicatively connected to the base station gateway controller, wherein the base station gateway controller is utilized as a media gateway for communications between the mobile switching center and the one or more base station controllers.

15 9. The system of claim 8, wherein the base station gateway controller provides a data signal transport gateway between circuit-based data and packet-based data.

10. The system of claim 9, wherein the communications are voice data communications.

20 11. The system of claim 8, wherein the base station gateway controller is configured to perform vocoding functions to translate between different data coding schemes.

12. The system of claim 1, wherein the circuit-based wireless telephony network is a Global System for Mobile Communications network.

13. The system of claim 1, wherein the circuit-based wireless telephony network is a  
5 Universal Mobile Telecommunications System network.

14. The system of claim 1, wherein the Internet telephony network is an Internet Protocol network.

10 15. The system of claim 14, wherein the Internet Protocol network is a Session Initiation Protocol network.

16. The system of claim 14, wherein the Internet Protocol network is a H.323  
network.

15 17. A method for facilitating communication between a first device, the first device being a packet-based Internet telephony network based device, and a second device, the second device being a circuit-based wireless telephony network based device, by facilitating connection of a call from the first device to the second device, the method  
20 comprising:

registering, at a serving Mobile Switching Center, a Mobile Station ISDN associated with the second device;

utilizing an Enum database to map the Mobile Station ISDN to a Session Initiation Protocol address associated with a home Session Initiation Protocol Registrar associated with the second device;  
obtaining, at the Mobile Switching Center, the Session Initiation Protocol address; and  
utilizing the Session Initiation Protocol address in connecting the call.

18. The method of claim 17, wherein the method comprises utilizing a modified registration procedure.
19. The method of claim 17, wherein the method comprises utilizing a modified mobile switching station.
20. The method of claim 17, wherein the second device is based on a Global System for Mobile Communications network.
21. The system of claim 17, wherein the second device is based on a Universal Mobile Telecommunications System network.
22. A method for facilitating communication between a first device, the first device being a packet-based Internet telephony network based device, and a second device, the second device being a circuit-based wireless telephony network based device, by

facilitating connection of a call from the first device to the second device, the method comprising:

receiving, at a home Session Initiation Protocol proxy server associated with the first device, an invite to connect the call;

5           the home Session Initiation Protocol proxy server determining a Mobile Station ISDN associated with the second device;

utilizing a Home Location Register to map the mobile station ISDN to a Mobile Station Routing Number associated with the second device;

utilizing an Enum database to map the Mobile Station Routing Number to a

10         Session Initiation Protocol address associated with a serving mobile switching center associated with the second device; and

utilizing the Session Initiation Protocol address in connecting the call.

23.       The method of claim 22, wherein the method comprises a modified registration procedure.

15         24.      The method of claim 22, wherein the method comprises utilizing a modified Session Initiation Protocol proxy server.

20         25.     The method of claim 22, wherein the second device is based on a Global System for Mobile Communications network.

26. The method of claim 22, wherein the second device is based on a Universal Mobile Telecommunications System network.

27. A method for facilitating communication between a first device, the first device  
5 being a packet-based Internet telephony network based device, and a second device, the second device being a circuit-based wireless telephony network based device, by facilitating connection of a call from the first device to the second device, the method comprising:

receiving, at a Home Location Register, a first network address associated

10 with a serving Mobile Switching Center associated with the second device;

utilizing an Enum database to map the first network address to a Session Initiation Protocol domain name;

receiving, at a Home Location Register, the Session Initiation Protocol domain name;

15 receiving, at a Session Initiation Protocol proxy server, an invite to connect the call;

the Session Initiation Protocol proxy server querying the Home Location Register to obtain the Session Initiation Protocol domain name; and

utilizing the Session Initiation Protocol domain name in connecting the call.

20

28. The method of claim 27, wherein the method comprises a modified registration procedure and a modified call set up procedure.

29. The method of claim 27, wherein the method comprises utilizing a modified Home Location Register.

30. The method of claim 27, wherein the second device is based on a Global System  
5 for Mobile Communications network.

31. The method of claim 27, wherein the second device is based on a Universal  
Mobile Telecommunications System network.

10 32. The method of claim 27, wherein the first network address is an E.164 address.

15 33. A method for facilitating communication between a first device, the first device being a packet-based Internet telephony network based device, and a second device, the second device being a circuit-based wireless telephony network based device, by facilitating connection of a call from the first device to the second device, the method comprising:

a registration procedure, comprising:

receiving, at a Home Location Register, a first network address associated with a serving Mobile Switching Center associated with the second device;

20 utilizing an Enum database to map the first network address to a Session Initiation Protocol domain name; and

receiving, at a Home Location Register, the Session Initiation Protocol domain name; and

a call set up procedure, comprising:

receiving, at a Session Initiation Protocol proxy server, an invite to connect the call;

the Session Initiation Protocol proxy server querying the Home Location

- 5 Register to obtain the Session Initiation Protocol domain name; and

utilizing the Session Initiation Protocol domain name in connecting the call.

PCT/EP2017/062265